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MOTIVATIONS TO START BUSINESS: INSTITUTIONAL CONTEXT

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Abstract: This preprint is the second part of the Necessity-driven Entrepreneurship: a cross-country Analysis project.
This paper takes institutional environment's perspective on entrepreneurship in general, on necessity-driven entrepreneurship in particular, therefore incorporating its multidimensional nature and enabling more detailed understanding of interaction between entrepreneurial motivation and institutional arrangements.
The main content of this research determines the significant factors in the regulatory, normative, and cognitive pillars of the institutional environment. Using the databases of World Bank, the International Labour Organization, the Global Entrepreneurship Monitor survey, the Doing Business, and the World Economic Forum the set of the variables of the institutional environment was defined. These data are from 2009 to 2014, and range across 70 countries.
Our research shows that different institutional factors influence the total level of entrepreneurial activity and motivation structure differently.

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Motivations to Start Businesses: Institutional Context

Introduction

Determining the way that entrepreneurial activity influences on economic growth is one of the more popular research topics. A considerable part of them is dedicated to the study of the relation between country issues and different aspects of entrepreneurial activity, which include both the parameters that characterise the number of those involved in entrepreneurship activity and the qualitative features of entrepreneurship (Levie et al., 2014; Acs et al., 2014, Bowen and De Clercq, 2008; Van Stel et al., 2007).

Researchers believe that entrepreneurship is influenced by regional and countries characteristics, such as the level of economic development, the demographic situation and the development of institutes. In turn, entrepreneurship can influence the development of the economic and institutional environment. Most researchers speak about a positive influence of the entrepreneurial sector on economic development. (Acs and Audretsch, 2003; Carree and Thurik, 2010; Wennekers and Thurik, 1999; Audretsch and Keilbach, 2004; Acs, 2006; Van Praag and Versloot, 2007; Van Stel et al., 2005; Baumol and Strom, 2007).

A number of researchers indicate that countries are different not only in the level of entrepreneurial activity, but also in the structure of entrepreneurship. There exit different approaches to classifying entrepreneurship. General rates of entrepreneurship can be separated into two distinct types: replicative entrepreneurship and high-impact entrepreneurship (Acs, 2011; Shane, 2008; Stenholm et al., 2013). These two types of entrepreneurship have different roles in economic development. The former guarantees that the population is employed, but, at the same time, is not connected with offering innovative products or searching for new ways of conducting business. Therefore, this type of entrepreneurship does not contribute to economic growth. The latter type of entrepreneurship is one of the foundations of growth.

We can suppose that the institutional environment will have a different influence on different types of entrepreneurship.

The decision about starting a business is an individual decision, influenced by economic and institutional factors. For part of individuals, the decision about choosing the entrepreneurial career is a forced decision — they start their business because no other opportunities of having an income exit. For others, the creation of their own enterprise is a voluntary choice; they connect the advantages of a greater income or realising their own ideas and initiatives with having a private business.

Entrepreneurs from countries with a low level of economic development most commonly organise a new business as a result of absence of alternative possibilities of employment, and motivate their decision by having potentially profitable business ideas less often. Nevertheless, the level of entrepreneurial activity, including necessity-driven entrepreneurial activity, is very high in these countries. With economic growth, the number of alternatives to entrepreneurship increases. It leads both to a decline in the total number of entrepreneurs and to a decrease in the share of necessity-driven entrepreneurs. In economically developed countries, the number of those who start their own business for the sake of a greater income as opposed to the income they could get from being paid employees increases. It becomes possible through filling product niches with new products or through combining the resources of the organisation in an effective way.

The reasons for the start of a business will define the entrepreneur's behaviour, as well as which type of business he will create. The prevalence of necessity-driven or voluntary motivation will have its impact on whether replicative entrepreneurship or high-impact entrepreneurship will be in effect. Studying the structure of motivation helps one understand the characteristics of aspirations. Those who are forced to involved in entrepreneurship, or do so because they need to maintain the level of their income will, most likely choose to become a hired employee should an opportunity of employment with a comparable income appear, which may lead to a lower level of survivability of companies. The short-term orientation of

activity may as well lead to a smaller desire to invest in the development of the business and in the growth of the firm. Such features of the behaviour of entrepreneurs impact the fact that opportunity-driven entrepreneurship has a beneficial effect on economic growth while necessity-driven entrepreneurship may lack a beneficial effect (Autio, 2007; Shane, 2009; Acs and Varga, 2005).

Indeed, the data of the Global Entrepreneurship Monitor (GEM) project indicate differences in the innovativeness of businesses and the drive to increase the size of the companies of necessity- and opportunity-driven entrepreneurs (Table 1).

Although there are no statistically significant differences in the average age, there can be observed a variation among the countries. In general, necessity-driven entrepreneurs are older than opportunity-driven ones, which is reflected in the distribution differences. Mainly, it is characteristic of countries with a low level of economic development. For example, the share of necessity-driven entrepreneurs in the over 45 age group is 14.3%, and for opportunity-driven entrepreneurs this share is 9.3%. At the same time, in economically developed countries, there is a tendency to the "aging" of opportunity-driven entrepreneurs. In the USA, the share of necessity-driven entrepreneurs in the over 45 age group is 45.7%, and the share of opportunity-driven entrepreneurs is 57.7%.

Necessity-driven entrepreneurs and opportunity-driven entrepreneurs are also different in terms the level of income. Among necessity-driven entrepreneurs, people with a low level of income are prevalent (46.7%) while among necessity-driven entrepreneurs; the total annual income is considerably higher. Such differences become particularly evident when we compare different countries.

The differences in distribution by the level of education of necessity-driven entrepreneurs and opportunity-driven entrepreneurs signify that necessity-driven entrepreneurs have a higher level of education. Among necessity-driven entrepreneurs, the majority are individuals with primary and secondary education — 73.4%, and the percentage of those with post-secondary and higher education is 26.6% (3:1). Among opportunity-driven entrepreneurs the majority are individuals with primary and secondary education — 57.0%, and with post-secondary and higher — 43.0% (4:3).

In terms of employment status, we should mention that among necessity-driven entrepreneurs the share of the unemployed is higher than among opportunity-driven entrepreneurs. On the other hand, those who are employed full-time are most commonly opportunity-driven entrepreneurs, which means a more conscious decision about starting a business. In spite of having a job, an opportunity-driven entrepreneur decides to start his own business.

Apart from the differences in sociodemographic characteristics, there can also be noted differences in perceptions. Necessity-driven entrepreneurs more often have the fear of failure (on average 31.7% against 25.4%), are less involved in the entrepreneurial community (58.3% against 67.1% — know an entrepreneur who has started a business in the last 2 years), see fewer opportunities for starting a business (56.8% against 66.7%), and evaluate their skills in starting a new business slightly lower (80.4% against 85.5%).

Necessity- and opportunity-driven entrepreneurs differ in terms of aspirations. Necessity-driven entrepreneurs expect to work on new markets less often (38.9 against 46.8%), expect to create a new product less often (41.9 against 47.6%), and have lower expectations of growth (7.3% against 12.3% are planning to create 19 or more new workplaces).

The results of the studies indicate that the share of necessity-driven and opportunity-driven entrepreneurs varies in the countries with a different level of economic growth. In general, we can see that the share of necessity-driven entrepreneurs declines as GDP grows (Figure 1).

TABLE 1. Necessity-driven vs. Opportunity-driven entrepreneurship, % of TEA, 2013

	Necessity-driven entrepreneurship	Opportunity-driven entrepreneurship
Number of observation	7802	20505
Gender:		
Male	53.9	60.4
Female	46.1	39.6
Average age	37.5	36.6
Age group:		
under 25	14.4	16.2
25 to 34	30.8	32.3
35 to 44	26.2	26.0
45 to 54	18.8	17.1
over 54	10.0	8.5
Average family size	4.2	4.0
Average total annual income of household (GEM income recorded into thirds):		
lowest 33% tile	40.8	26.4
middle 33% tile	29.6	29.4
upper 33% tile	29.5	44.2
Highest level of education:		
pre-primary education	6.0	3.2
primary education	14.7	8.0
lower secondary education	17.5	12.9
upper secondary education	35.2	32.9
post-secondary non-tertiary education	10.6	13.6
first stage of tertiary education	15.4	28.1
second stage of tertiary education	0.6	1.3
Employment status:		
employed by others in full-time work	15.0	26.9
employed by others in part-time work	8.3	10.8
self-employed	70.9	66.0
unemployed	16.0	9.6
Fear of failure	31.7	25.4
Personal acquaintanceship with an entrepreneur	58.3	67.1
Expectations of good opportunities of starting a business within 6 months	56.8	66.7
Having the required knowledge, skill and experience to start a new business	80.4	85.5
New market (few/no businesses offer the same product)	38.9	46.8
Product is new to all or some customers	41.9	47.6
Expects more than 5 employees in next 5 years	18.9	29.6
Expects more than 19 jobs in 5 years	7.3	12.3
Technology level of the sector	3.0	4.4

Note. We used the complete GEM database using individual-level data (244,464 observations) across 70 countries in 2013.

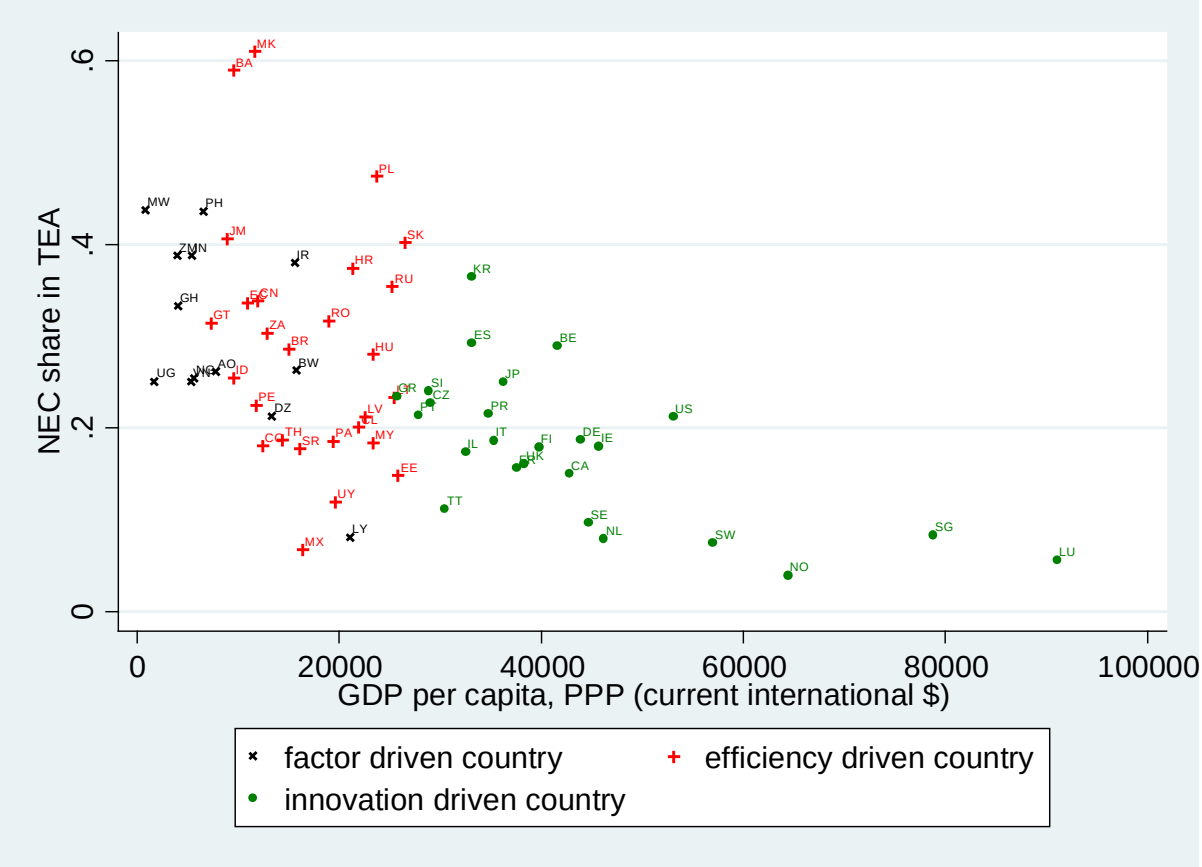

FIGURE 1. Share of necessity-driven entrepreneurs, divided by the country group and the level of GDP per capita in 2013*

Not all high-income countries have the same level of opportunity-driven entrepreneurial activity; likewise, not in all low- and middle-income countries are entrepreneurs forced to start their business as a result of external circumstances. In spite of the existence of the connection between the level of GDP and the share of necessity-driven entrepreneurs, there is a rather considerable spread of the value of the indicator characterising the share of necessity-driven entrepreneurship, in the countries with a similar level of economic development. Distribution and variation of opportunity-driven entrepreneurship within a country's group vary considerably. These differences can be explained by the influence of institutes.

The purpose of the work is to determine the factors of institutional environment influencing the structure of motivation of entrepreneurs and to determine the set of variables leading to an increase in the level of activity of necessity-driven entrepreneurs and the growth of the share of necessity-driven entrepreneurs among entrepreneurs.

The factors of institutional environment

Institutions are attributed to such aspect of social structure that implies existence if authoritative guidelines and restraints for human behavior (North, 1990) According to definition of Powell W.W. and DiMaggio P.J. (1983) institutions are taken-for-granted rules, which can either be consciously perceived by people, or act as embedded guideline for people's actions.

Institutional environment in which entrepreneurs are embedded significantly influence development of a business (Ahlstrom and Bruton, 2010). Application of institutional theory has the potential to provide great insights for entrepreneurship. Institutional environment can shape entrepreneurial behavior and explain antecedents of entrepreneurship as well as determinants of its characteristics. Entrepreneurial activities cannot be analyzed without

consideration of the institutional context, in which they occur (North, 1990; Baumol, 1996). Institutional theory has proven to be a useful theoretical foundation for exploring a wide variety of topics of interest to entrepreneurship studies (Stenholm et al., 2013). The majority of the research concentrates on the effects of the institutional environment on general rate of entrepreneurial activities and country-level differences in the structuring of entrepreneurial activity. Some studies have explored the effect of institutions on different types of entrepreneurial action, such as high growth expectations vs. low growth expectations (e.g., Stenholm et al., 2013; Levie and Autio, 2011), productive vs. nonproductive (Baumol, 1996; Sobel, 2008). There are few studies on opportunity vs. necessity entrepreneurial entries (Sambharya and Musteen, 2014; Thurik and Dejardin, 2011; Valdez and Richarson, 2013). Understanding of the structure of motivation may be useful for stimulating the creation of growthoriented entrepreneurial firms. Most researches acknowledge that institutes can have a different influence on opportunity- and necessity-driven entrepreneurship.

The theoretical base for a lot of research is provided by three institutional pillars introduced by Scott (1995), and adapted by Kostova (1997) and Busenitz et al. (2000). Scott (1995), using a vast literature review, highlighted three main sources of institutes — regulatory, normative and cognitive, and indicated that there can be different bases for their existence, as well as enforcement mechanisms and expected effects.

Regulatory institutions refer to the formally codified and enforced structure of laws in a country. The normative institutions manifest in standards which are established by different groups and associations. Cognitive institutions are the beliefs about the expected standards of behavior that are specific to a culture, which are typically learned through social interactions by living in a society.

Scott's three pillars provide incentives that promote or inhibit entrepreneurial behavior in an economy (Stenholm et al., 2013) and can be used for suggestion about institutional arrangements which determine entrepreneurial activity in an economy. We use three pillars theory for identification variables of necessity- driven entrepreneurship.

As it was said, regulatory institutes restrict and order behaviour. The fewer barriers there are on the way to starting a business, the higher the level of entrepreneurial activity (Veciana and Urbano, 2008); besides, difficulties on the way to creating a business will have a stronger influence on necessity-driven entrepreneurs.

Start-up costs can also have a negative effect on the level of entrepreneurial activity. It should be considered that затраты на создание бизнеса are connected with its complexity. As necessity-driven entrepreneurs are mostly not ready to considerable investments, an increase in the start-up costs will have a negative effect on the level of entrepreneurial activity.

In the absence of a sufficient level of demand on the labour market, an individual has a choice — to start his own business or to remain unemployed. If the country has social security programs and high unemployment benefits, the number of those starting a business will be smaller than in the situation where there are none; this way, the existence of social security programs and coverage of unemployment benefits will have a negative effect on the level of activity of necessity-driven entrepreneurs.

An important issue that impacts entrepreneurship in general is taxation. Under a high tax burden, an individual may consider starting a business not viable. A necessity-driven entrepreneur will compare the possible net income not only with possible alternative incomes, but also with the amount of money he can receive if he remains unemployed. Reducing tax rate may stimulate entrepreneurial activity (Acs and Szerb, 2007), including the activity of necessity-driven entrepreneurs. Moreover, a notion exists that in countries with a high level tax burden often characterize high level of social guarantees (Bjornskov and Foss, 2008), so we can suppose that in countries with a higher tax burden, the level of activity of necessity-driven entrepreneurs will be lower.

Lack of property rights protection may discourage entrepreneurs to develop their business (Stenholm et al., 2013; Diaz-Casero et al., 2012; Tonoyan et al., 2010). Uncertainty about receiving income from the capital invested has a negative influence on entrepreneurial activity in general, and on the activity on necessity-driven entrepreneurs in particular.

The normative measurement of the institutional environment is connected with social values which are perceived by individuals as preferable and social norms defining the patterns of behaviour and the perception of this or that kind of behaviour. Among the normative factors influencing the level of entrepreneurial activity in general and the level of activity of necessity-driven entrepreneurs, there are two traditionally mentioned factors: perceiving entrepreneurship as a successful career choice and the perception of an entrepreneur as a person respected in the society (Busenitz et al., 2000). To make a decision about starting a business, an individual has to perceive that his actions are supported. The results of previous researches indicate that there is a positive connection between the normative pillar and the level of entrepreneurial activity (Valdez and Richardson, 2013). Interestingly, in case of necessity-driven entrepreneurs, the need for support can turn out to be more important than in the situation with those who purports to exploit opportunities. It should be considered that in the group of countries with a lower level of economic development the perception of an entrepreneurial career is higher than in the countries with a high level of economic development. It is explained by a smaller choice of employed alternatives (Singer et al., 2015). This is why in the countries characterised by a high status of an entrepreneur and of the choice of entrepreneurial career, there will be noted a higher share of necessity-driven entrepreneurs, as well.

Another aspect of normative pillar concerns corruption perception in the society. Actually trust-worthiness of country’s economic actors is considered to be one of the most important factors since corruption may hamper entrepreneurial behavior (Bowen and de Clecrq, 2008). Entrepreneurs usually act as givers of bribes — that is, for them, the commonplaceness of bribery means increased expenses for the creation and the management of their business. When evaluating the corruption in a country, one must consider not just the formal institutes, but also the attitude to corruption in the society (Tonoyan et al., 2010). Therefore, we can suggest that if a society perceives corruption as the behavioral norm, the level of entrepreneurial activity of necessity-driven entrepreneurs will be lower as they are more susceptible to costs increases.

As opposed to the normative pillar, which explains what individuals undertake for gaining approval and reflect the collective principles of decision-making, cognitive factors are oriented for individual experience and specific people's convictions. On the other hand, the cultural context influences individual perception.

Fear of failure is one of cognitive factors. An entrepreneur differs from a hired employee by his readiness to take upon himself risks connected with running a business individually. Starting one's own business is, in most cases, connected with uncertainty in terms of future and the of possibility of making a profit. Attitude to risk is one of personal characteristics, but may be influenced by institutional factors and the transparency of the rules of operating a business. The perception of risk affects the level of entrepreneurial activity (Stenholmet et al., 2013). The higher, in a society, the number of those who are afraid of failure is the lower the activity of necessity-driven entrepreneurs.

Entrepreneur’s beliefs about relevance of skills that he has are likely to enhance entrepreneurial activity in a country (Shane, 2000; Bowen and de Clecrq, 2008). Still, what is important is not a formal education but the perception of one's knowledge. It should be noted that the necessary knowledge is defined by the complexity of the business; therefore, in the countries where the majority of the businesses is not connected with complex productions and technologies, the share of necessity-driven entrepreneurship can be characterized by a higher level of individual certainty, even at a lower level of education. Uncertainty of having the necessary knowledge to start one's own business can lead to the decision to abstain from

starting a business. The more people in the country think that they do not have the necessary knowledge, the lower the level of necessity-driven entrepreneurial activity.

As it was mentioned earlier, cognitive factors are influenced by the culture. Cross-cultural researches let us speak of differences of the value of entrepreneurship in different countries. Nevertheless, the connection between the attributes of culture offered by Hofstede and entrepreneurial activity is controversial. For example, some researchers indicate a positive connection between Uncertainty Avoidance and the number of individuals who have started a business while other come to the opposite conclusions (Valdez and Richardson, 2013). This may be explained by the imperfection of attributes used for describing a culture, as well as by the fact that there exist different types of entrepreneurship. Those entrepreneurs who are opportunity-driven will feel more comfortable in the countries whose culture is characterised by innovativeness and long-term orientation. For necessity-driven these parameters will have a smaller significance. In general, different parameters of a culture can have a different influence on necessity-driven and opportunity-driven entrepreneurs, i.e. different parameters will influence the ratio of entrepreneurs with different motivations rather than the level of activity (Sambharya and Musteen, 2014). The countries in whose culture avoiding uncertainty prevails are characterised by the prevalence of individuals aspiring to the prevalence of clear rules of behaviour and not tending to show personal initiative. In these conditions, the share of necessity-driven entrepreneurs will be higher than in the countries with a low level of avoiding uncertainty. Lack of perseverance will have a similar influence. In the countries where the value of this parameter is low, the share of necessity-driven entrepreneurs will be higher.

The prepositions are summarized in Table 2.

TABLE 2. Prepositions of the research

Factor	**Total early-stage entrepreneurial activity**	**Necessity-driven entrepreneurship in TEA**
Regulatory		
High quality of regulation	Positive	Positive
High start-up costs	Positive	Positive
High tax burden	Positive	Negative
Lack of property rights protection	Negative	Negative
Normative		
Successful career choice	Positive	Positive
High status of entrepreneur	Positive	Positive
Perception of corruption as the behavioral norm	Negative	Negative
Cognitive		
Fear of failure	Negative	Negative
Capability perceptions	Positive	Negative
Opportunity perceptions	Positive	Negative
Uncertainty avoidance	Negative	Positive
Individualism	Positive	Negative

Methodology and data

In order to examine our hypothesis we use regression analysis, taking into account controls. As a dependent variable, we use the GEM country-aggregated index — Necessity-based early-stage entrepreneurial activity, which is the percentage of individuals involved in early-stage entrepreneurial activity (as defined above) who claim to be driven by necessity

(having no better choice for work) as opposed to opportunity (Singer, 2015). To check that our components have an effect specifically on necessity-driven entrepreneurship we compare our results with a similar specification where the dependent variable is one more GEM country-aggregated index – Total early-stage Entrepreneurial Activity (TEA), which is the percentage of population aged 18-64 who are either nascent entrepreneurs or owner-managers of a new business.

The most comprehensive source providing entrepreneurial activity measures is the Global Entrepreneurship Monitor (GEM) (Raynolds et al, 2005). However, GEM does not provide all the data required for our research. Therefore, we collected information from five data sources to obtain the best available coverage. If GEM data is available for a particular country in a particular year, we merge the data from the other databases. The limitations of different databases lead to missing data in time and across countries.

For each economy the control variables indicate the peculiarities of the labour market, the financial system, and the stage of the economic development. In accordance with our hypotheses we identify proxy-variables for normative, regulatory and cognitive components. The variable definitions are detailed in Table 3.

As a result, we constructed two databases with 21 variables for each year for the period from 2009 to 2014. The first database consists of all countries which took part in GEM project (unbalanced panel). The number of countries ranges from 54 to 70 across time due to the changes in the number of the countries which participated in GEM. Summary statistics for the variables employed in our analysis is presented in Tab. 4. The second database consists only of those countries which took part in GEM project every year of the time period taken. The descriptive statistic for the balanced panel is presented in Tab. 4. We use this database for the robustness check.

It should be noted that, apart from the obvious correlations between variables inside each component, there are no high correlations. It means that there is no problem of multicollinearity in spite of using a large number of data sources. However, existence of missing observations due to the merging of different data sources and the scarcity of observations in time leads to restrictions in the numbers of variables. This is precisely why we sequentially include control variables.

TABLE 3. List of variables

Name	Description	Data Source*	Comments**
TEA	Total early-stage Entrepreneurial Activity (TEA): Percentage of 18-64 population who are either a nascent entrepreneur or owner-manager of a new business	GEM Key Indicators	Dependent variable
TEA_nec	Necessity-Driven Entrepreneurial Activity: Relative Prevalence Percentage of those involved in TEA who are involved in entrepreneurship because they had no other option for work	GEM Key Indicators	Auxiliary variable
Y = TEA_nec/TEA*100	Share of necessity-driven entrepreneurs in TEA		Dependent constructed variable
lGDP=log(NY.GDP.PCAP.PP.CD)	Logarithm of GDP	WDI	CV-1
EASY_LOANS = EOSQ088	Ease of access to loans, 1-7 (best)	GCI	CV-2

lUNEMPL = log(SL.UEM.TOTL.ZS)	Unemployment, total (% of total labour force) (modeled ILO estimate)	WDI	CV-3
NES_C06_MEAN	Government programs aimed at supporting new and growing firms are effective, 1 – 5 (best)	NES Key variables	RC-1
TAX_TOTL = IC.TAX.TOTL.CP.ZS	Total tax rate, % of commercial profit	WDI	RC-2
LEGRGHTIDX	Legal rights index, 0–10 (best)	GCI	RC-3
DTF	Complexity of starting a business, 0 – 100 (the most complex)	DB	RC-4
Suskil	Perceived Capabilities - Percentage of 18-64 population (individuals involved in any stage of entrepreneurial activity excluded) who believe they have the required skills and knowledge to start a business	GEM Key Indicators	CC-1
Opport	Perceived Opportunities - Percentage of 18-64 population (individuals involved in any stage of entrepreneurial activity excluded) who see good opportunities to start a firm in the area where they live	GEM Key Indicators	CC-2
Frfail	Fear of Failure Rate - Percentage of 18-64 population (individuals involved in any stage of entrepreneurial activity excluded) who indicate that fear of failure would prevent them from setting up a business	GEM Key Indicators	CC-3
Idv	Individualism - as it is juxtaposed to its opposite, collectivism, that is the measure to which individuals are comfortably integrated into groups.	Hofstede's Global Leadership Dimensions	CC-4
Uai	Uncertainty Avoidance Index - deals with a society's tolerance for uncertainty and ambiguity; it ultimately refers to man's search for Truth.	Hofstede's Global Leadership Dimensions	CC-5
BSN_AS_CAREER = Nbgoodyy	Entrepreneurship as Desirable Career Choice - Percentage of 18-64 population who agree with the statement that in their country, most people consider starting a business as a desirable career choice	GEM Key Indicators	NC-1
BSN_AS_STATUS = Nbstatyy	High Status Successful Entrepreneurship - Percentage of 18-64 population who agree with the statement that in their country, successful entrepreneurs receive high status	GEM Key Indicators	NC-2
GOV_Favor = EOSQ042	Favoritism in decisions of government officials, 1-7 (never shows favoritism)	GCR	NC-3

BRIBEIDX	Irregular payments and bribes, 1-7 (best)	GCR	NC-4
CON3Let	Country code (3-letter ISO)		ID
Year	Observation year		ID

Note. * We use 5 data sources for creating the database needed. All data are free. NES Key variables and GEM Key Indicators are available at http://www.gemconsortium.org/data; WDI are available at http://data.worldbank.org/data-catalog/world-development-indicators; Hofstede's Global Leadership Dimensions are available at http://www.geerthofstede.nl/dimension-data-matrix; GCR report is the Global Competitiveness Report (available at http://www3.weforum.org/); Doing Business (DB) database is available at http://www.doingbusiness.org .
**RC – Regulatory component; NC – Normative component; CC – Cognitive component, ID – identification number, CV – control variable.

TABLE 4. Descriptive statistics of variables

Variable		Unbalanced panel					Balanced panel				
		Obs	**Mean**	**Std. Dev.**	**Min**	**Max**	**Obs**	**Mean**	**Std. Dev.**	**Min**	**Max**
	Necessity-Driven Entrepreneurial Activity, % of TEA	374	25.4	11.5	3.54	61.3	174	25.5	11.4	3.54	61.3
	Total early-stage Entrepreneurial Activity, % of 18-64 population	374	12.3	8.51	2.10	52.1	174	10.3	6.70	3.26	50.1
CV	Logarithm of GDP	365	9.83	0.84	6.64	11.9	174	10.1	0.56	9.01	11.1
CV	Ease of access to loans, 1-7 (best)	347	2.97	0.78	1.50	5.08	166	3.04	0.81	1.50	4.78
CV	Logarithm of unemployment	364	2.02	0.65	-1.20	3.47	145	2.10	0.57	1.10	3.34
RC	Government programs aimed at supporting new and growing firms are effective, 1 – 5 (best)	333	2.55	0.45	1.50	3.57	155	2.55	0.44	1.50	3.56
RC	Legal rights index, 0–10 (best)	344	6.28	2.17	1.00	10.0	166	6.26	1.92	3.00	10.0
RC	Total tax rate, % of commercial profit	337	41.7	17.6	7.40	137.	154	45.6	19.4	18.4	137
RC	Complexity of starting a business, 0 – 100 (the most complex)	367	81.9	12.0	36.8	97.9	174	83.3	10.7	51.4	94.7
NC	Entrepreneurship as Desirable Career Choice, % of 18-64	342	65.7	14.1	17.9	95.3	168	63.5	14.2	26.1	90.9

	population										
NC	High Status Successful Entrepreneurship, % of 18-64 population	344	70.5	10.7	41.7	100	168	69.5	10.3	41.7	88.3
NC	Irregular payments and bribes, 1-7 (best)	355	4.37	1.22	2.27	7.32	168	4.57	1.23	2.31	7.32
NC	Favoritism in decisions of government officials, 1-7 (never shows favoritism)	355	3.39	0.92	1.56	5.85	168	3.54	0.94	1.70	5.85
CC	Perceived Capabilities, % of 18-64 population	374	51.3	16.1	9.00	92.2	174	47.1	14.5	9.00	92.2
CC	Fear of Failure Rate, % of 18-64 population	374	37.5	10.2	11.8	72.3	174	38.7	8.73	22.7	72.3
CC	Perceived Opportunities, % of 18-64 population	374	41.2	17.8	2.85	85.5	174	36.9	16.5	2.85	73.1
CC	Individualism, 0 – 100	326	42.9	24.0	6.00	91.0	162	48.6	22.9	13.0	91.0
CC	Uncertainty Avoidance Index, 0 – 100	369	67.5	22.5	8.00	100	174	71.1	23.9	13.0	100

Results

To measure the effect of the regulatory component on necessity-driven entrepreneurship, we use 5 variables; other than those variables specified hereinbefore we included three Doing Business indicators (the costs and the number of business start-up procedures, as well as the time required to start a business). None of these indicators provide steady statistically significant results. This led us to include an aggregated index – the complexity of starting a business (DTF), which is provided by the Doing Business database. One more indicator which we used as a proxy for the regulatory component was the legal right index from the Global Competitiveness Report. This index was statistically insignificant in all specifications, and we exclude it from our final specifications. The main specifications with regulatory variables are presented in Tab. 5 – 6.

We use four variables to estimate the normative component. However, only two variables from GEM are available for all years — the percentage of population aged 18-64 who agree with the statement that “in their country, most people consider starting a business as a desirable career choice” and the percentage of population aged 18-64 who agree with the statement that “in their country, successful entrepreneurs receive high status.” The other two variables indicate corruption in the economy and we sequentially add them into specifications. The final specifications are presented in Tab. 7 – 8.

Five variables are proxy for the cognitive component. Three variables are available in GEM (perceived opportunities, fear of failure rate, perceived capabilities), and two variables are used as constant in time Hofstede Indexes (individualism and uncertainty avoidance). Due to the restriction in the numbers of variables we separately estimate GEM and Hofstede variables. The final estimations are presented in Tab. 9 – 10.

There are the same results for the control variables in all specifications. Logarithm of GDP negatively influences both the share of necessity-driven entrepreneurship and TEA. The proxy-variable for financial resources – ease of access to loans – negatively influences the share of necessity-driven entrepreneurship but does not influence TEA. The impact of logarithm of unemployment on the share of necessity-driven entrepreneurship and TEA is opposite: positive influence on the share of necessity-driven entrepreneurship and negative on TEA.

Discussion and conclusion

This paper takes an institutional environment's perspective on entrepreneurship in general, and on necessity-driven entrepreneurship in particular, thereby considering its multidimensional nature and enabling a more detailed understanding of interaction between entrepreneurial motivation and institutional arrangements.

The results show that the efficiency of government programs supporting entrepreneurship does not significantly influence TEA. However, if such programs exist, the share of necessity-driven entrepreneurship decreases. We suppose that creating efficient programmes which help to solve problems of start-up businesses can lead to an increase in the share of opportunity-driven entrepreneurship.

The tax burden influences TEA, but, at the same time, the motivation structure does not change. It should be noted that this indicator is used for the tax burden of companies; however, not all entrepreneurs pay corporate tax.

The complexity of starting a business leads to a decrease in the number of necessity-driven entrepreneurs. This result could be interpreted differently. On the one hand, when both time required to start a business and start-up costs increase, necessity-driven entrepreneurs abandon the idea of creating a business. On the other hand, when start-up procedures become more complicated, necessity-driven entrepreneurs might create an illegal business.

The findings suggest that normative factors have a different impact on the level of entrepreneurial activity in general, as well as on the level of necessity-driven entrepreneurship. For TEA, the significant factors having a positive effect are the perception of the entrepreneur's career as a successful choice and the high status of an entrepreneur in the society, while the proxy factors of corruption are negative and significant. An exception is the model that includes the logarithm of GDP, indicating a link between the level of economic development and the level of corruption – bribery index and government favoritism.

The assumption that the high status of an entrepreneur has a positive influence on the level of necessity-driven entrepreneurship is not confirmed. The recognition by society and the approval of the entrepreneur's behavior have the greater stimulating effect on the overall level of entrepreneurial activity than on the structure of motivation. The share of necessity-driven entrepreneurs does not depend on whether their career is viewed as successful.

An unexpected result is that the level of corruption in the country has a positive effect on the share of necessity-driven entrepreneurship. This may indicate that necessity-driven entrepreneurs are not as affected by the necessity of giving bribes as expected, which increase both the entry costs and the cost of starting a business. Government favoritism has a similar effect: if individuals believe that there is selectivity for individual firms, it reduces their confidence in the possibility of creating a successful company. However, necessity-driven entrepreneurs are less affected by the corruption factor, probably due to the fact that their main purpose is to maintain their profits rather than getting recognition and respect, or a

substantial increase in revenue. Thus, necessity-driven entrepreneurs are less affected by the corruption aspect of the normative component. We suppose that the share of opportunity-driven entrepreneurship will increase if the corruption level decreases, which is a positive factor for economic development.

Cognitive factors show a multidirectional effect. Having knowledge and skills sufficient for creating a business has a positive influence on both the entrepreneurial activity and the share of necessity-driven entrepreneurs. We suppose that the presence of people who take a favourable view of their own knowledge and abilities has a positive effect on the proportion of necessity-driven entrepreneurs also because they require less knowledge to start and maintain less complex businesses.

Evaluation of possibilities for setting up a business has a positive impact on the overall level of entrepreneurial activity, but has a negative effect on the share of necessity-driven entrepreneurs. We suppose that a wide range of business ideas and a favourable business environment lead to increasing of opportunity-driven entrepreneurship.

The fear of failure indicator has an insignificant impact on both the overall level of entrepreneurial activity and the share of necessity-driven entrepreneurship.

Hofstede's “individualism” and “uncertainty avoidance” cultural dimensions show a negative influence on the overall level of entrepreneurial activity; however, we cannot make unambiguous conclusions regarding the impact of cultural factors on the share of necessity-driven entrepreneurship.

Our research shows that different institutional factors influence the total level of entrepreneurial activity and motivation structure differently. Further research could be concerned with identifying the factors of institutional environment which could influence opportunity-driven entrepreneurship. Another direction of further research could link with addition of variables — for example, availability of social security programs and high unemployment benefits.

TABLE 5. Estimations of the impact of regulatory component on necessity-driven entrepreneurship and TEA (unbalanced panel)

Variable	**Y as dependent variable**						**TEA as dependent variable**					
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**	**(9)**	**(10)**	**(11)**	**(12)**
Efficiency of government programs, 1-5	-5.810*** (1.26)	-5.534*** (1.32)	-5.566*** (1.25)	-4.974*** (1.28)	-6.129*** (1.23)	-5.696*** (1.25)	1.067 (0.81)	1.135 (0.81)	-1.741 (0.90)	-1.768 (0.94)	-2.957** (0.93)	-3.160** (0.97)
Corporate tax rate, % profits	-0.0376 (0.04)		-0.108* (0.04)		-0.084* (0.04)		-0.004 (0.03)		-0.043 (0.03)		-0.037 (0.03)	
Complexity of starting a business, 0-100	-0.0196 (0.07)	0.0211 (0.07)	-0.173* (0.07)	-0.138 (0.07)	-0.288*** (0.06)	-0.241*** (0.06)	-0.020 (0.05)	0.004 (0.05)	-0.256*** (0.05)	-0.253*** (0.05)	-0.236*** (0.05)	-0.221*** (0.05)
Total tax rate, %		-0.0360 (0.04)		-0.105** (0.04)		-0.0655 (0.04)		0.005 (0.03)		-0.020 (0.03)		-0.011 (0.03)
Log of GDP	-5.953*** (0.84)			-6.227*** (0.86)			-6.572*** (0.73)	-7.021*** (0.75)				
Ease of access to loans, 1-7		-5.287*** (0.72)			-5.671*** (0.74)				-0.185 (0.55)	0.066 (0.55)		
Log of unemployment			5.640*** (0.95)			5.789*** (0.97)					-2.619*** (0.63)	-3.269*** (0.62)
Constant	101.8*** (7.40)	99.98*** (7.18)	74.53*** (6.21)	70.89*** (6.40)	5530*** (6.29)	48.96*** (5.98)	74.27*** (5.92)	76.21*** (6.24)	36.85*** (5.41)	34.93*** (5.38)	42.75*** (5.22)	42.33*** (4.96)
N	308	298	309	286	309	296	308	298	309	286	309	296
Adj. R2	0.317	0.301	0.303	0.292	0.295	0.282	0.434	0.425	0.151	0.141	0.191	0.202
F	16.59	16.05	16.98	14.54	15.29	12.92	17.14	16.64	4.886	4.508	6.924	7.545

Note: all regressions include time fixed effects; (***), (**), (*) denote significance at p<0.01, p<0.05, and p<0.10 respectively; standard errors are presented in parenthesis

TABLE 6. Estimations of the impact of regulatory component on necessity-driven entrepreneurship and TEA (balanced panel)

Variable	Y as dependent variable						TEA as dependent variable					
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**	**(9)**	**(10)**	**(11)**	**(12)**
Efficiency of government programs, 1-5	-8.840*** (1.54)	-8.593*** (1.66)	-8.543*** (1.51)	-8.734*** (1.59)	-7.866*** (1.78)	-7.460*** (1.91)	3.507*** (0.94)	3.406*** (0.96)	-0.211 (1.09)	-0.585 (1.12)	-1.494 (1.40)	-2.644 (1.47)
Corporate tax rate, % profits	0.193 (0.04)		-0.018 (0.04)		0.036 (0.04)		0.064** (0.02)		0.071* (0.03)		0.068* (0.03)	
Complexity of starting a business, 0-100	-0.280*** (0.08)	-0.323*** (0.09)	-0.377*** (0.08)	-0.375*** (0.10)	-0.405*** (0.08)	-0.396*** (0.08)	0.072 (0.05)	0.082 (0.06)	-0.110* (0.05)	-0.0954 (0.06)	-0.122** (0.04)	-0.127** (0.05)
Total tax rate, %		0.008 (0.03)		-0.023 (0.04)		0.021 (0.03)		0.065** (0.02)		0.065* (0.03)		0.065* (0.03)
Log of GDP	-7.706*** (1.31)	-8.274*** (1.35)					-8.238*** (1.42)	-8.392*** (1.40)				
Ease of access to loans, 1-7			-4.402*** (0.97)	-4.496*** (1.01)					0.041 (0.81)	-0.104 (0.81)		
Log of unemployment					5.964*** (1.44)	6.813*** (1.45)					-1.779 (1.19)	-2.691* (1.27)
Constant	146.1*** (13.30)	154.9*** (13.42)	92.07*** (8.67)	92.84*** (9.33)	62.74*** (9.31)	59.73*** (10.20)	73.46*** (11.27)	74.42*** (11.21)	14.15** (4.59)	15.07** (4.97)	22.48** (8.12)	28.26** (8.76)
N	151	140	151	136	151	140	151	140	151	136	151	140
R2_a	0.548	0.565	0.512	0.508	0.513	0.531	0.366	0.364	0.037	0.017	0.054	0.053
F	21.21	19.31	20.44	17.89	17.79	17.45	12.47	11.43	6.669	3.898	7.954	5.621

Note: all regressions include time fixed effects; (***), (**), (*) denote significance at p<0.01, p<0.05, and p<0.10 respectively; standard errors are presented in parenthesis

TABLE 7. Estimations of the impact of normative component on necessity-driven entrepreneurship and TEA (unbalanced panel)

Variable	Y as dependent variable						TEA as dependent variable					
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Entrepreneurship as Desirable Career Choice	-0.0244 (0.05)	0.120* (0.05)	0.107* (0.05)	-0.0465 (0.05)	0.0766 (0.05)	0.0503 (0.05)	0.109** (0.04)	0.211*** (0.03)	0.212*** (0.03)	0.115** (0.04)	0.195*** (0.03)	0.197*** (0.03)
High Status Successful Entrepreneurship	-0.0858 (0.06)	-0.0194 (0.06)	0.0243 (0.05)	-0.0606 (0.06)	0.00247 (0.06)	0.0522 (0.05)	0.0525 (0.03)	0.0898* (0.04)	0.0748* (0.03)	0.0468 (0.03)	0.0982** (0.04)	0.0823* (0.03)
Irregular payments and bribes	-1.657** (0.64)	-1.916** (0.66)	-3.130*** (0.56)				0.124 (0.36)	-1.511*** (0.40)	-1.568*** (0.36)			
Favoritism in decisions of government officials				-3.172*** (0.87)	-3.672*** (0.93)	-5.238*** (0.72)				0.428 (0.49)	-2.309*** (0.51)	-2.259*** (0.43)
LOG of GDP	-6.998*** (1.08)			-6.269*** (1.13)			-5.546*** (1.00)			-5.721*** (1.06)		
Ease of access to loans, 1-7 (best)		-4.878*** (0.83)			-4.105*** (0.91)			0.347 (0.48)			0.628 (0.51)	
LOG of unemployment			5.315*** (1.02)			5.052*** (1.05)			-2.379*** (0.54)			-2.446*** (0.53)
Constant	109.5*** (11.80)	43.14*** (5.01)	19.90** (6.24)	105.6*** (11.95)	46.19*** (5.06)	26.39*** (6.44)	53.59*** (11.11)	-4.292 (3.36)	2.942 (3.94)	54.42*** (11.37)	-3.492 (3.34)	4.315 (3.98)
N	321	316	320	321	316	320	321	316	320	321	316	320
adj. R2	0.303	0.262	0.271	0.318	0.281	0.309	0.411	0.290	0.330	0.412	0.293	0.334
F	18.79	18.46	14.30	22.90	21.65	19.73	24.19	18.57	22.31	24.36	19.05	22.39

Note: all regressions include time fixed effects; (***), (**), (*) denote significance at p<0.01, p<0.05, and p<0.10 respectively; standard errors are presented in parenthesis

TABLE 8. Estimations of the impact of normative component on necessity-driven entrepreneurship and TEA (balanced panel)

Variable	Y as dependent variable						TEA as dependent variable					
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Entrepreneurship as Desirable Career Choice	-0.117* (0.05)	0.109 (0.06)	0.0626 (0.06)	-0.117* (0.05)	0.0828 (0.07)	0.0279 (0.06)	0.166*** (0.02)	0.249*** (0.03)	0.267*** (0.03)	0.167*** (0.02)	0.241*** (0.03)	0.257*** (0.03)
High Status Successful Entrepreneurship	-0.0479 (0.07)	-0.0174 (0.06)	0.00231 (0.06)	-0.0305 (0.07)	0.00518 (0.07)	0.0346 (0.06)	0.104** (0.03)	0.114** (0.04)	0.104** (0.04)	0.0975** (0.03)	0.121** (0.04)	0.114** (0.04)
Irregular payments and bribes	-1.558* (0.70)	-1.813* (0.82)	-3.019*** (0.70)				0.238 (0.46)	-0.701 (0.45)	-1.057** (0.39)			
Favoritism in decisions of government officials				-2.615* (1.09)	-3.329** (1.14)	-5.044*** (0.94)				0.606 (0.64)	-1.163* (0.56)	-1.651*** (0.47)
LOG of GDP	-13.55*** (1.69)			-12.59*** (1.96)			-4.941*** (1.10)			-5.301*** (1.26)		
Ease of access to loans, 1-7 (best)		-6.931*** (1.07)			-6.237*** (1.14)			0.0342 (0.56)			0.234 (0.61)	
LOG of unemployment			7.445*** (1.53)			6.780*** (1.59)			-2.860*** (0.63)			-3.042*** (0.63)
Constant	179.1*** (17.21)	50.97*** (6.27)	20.31* (7.98)	170.4*** (19.05)	52.39*** (6.36)	25.78** (8.33)	39.59*** (10.07)	-11.37** (3.81)	-4.256 (4.14)	42.45*** (11.41)	-11.10** (3.69)	-2.915 (4.23)
N	162	160	162	162	160	162	162	160	162	162	160	162
adj. R2	0.445	0.391	0.338	0.451	0.409	0.381	0.467	0.379	0.433	0.470	0.384	0.443
F	21.23	16.22	11.08	24.08	17.33	15.92	12.12	10.45	14.15	12.33	10.92	15.13

Note: all regressions include time fixed effects; (***), (**), (*) denote significance at p<0.01, p<0.05, and p<0.10 respectively; standard errors are presented in parenthesis

TABLE 9. Estimations of the impact of cognitive component on necessity-driven entrepreneurship and TEA (unbalanced panel)

Variable	**Y as dependent variable**						**TEA as dependent variable**					
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**	**(9)**	**(10)**	**(11)**	**(12)**
Perceived Capabilities	0.103* (0.04)	0.173** (0.06)	0.285*** (0.05)				0.185*** (0.03)	0.214*** (0.03)	0.288*** (0.03)			
Fear of Failure Rate	0.0281 (0.06)	-0.0876 (0.07)	-0.0518 (0.07)				-0.00675 (0.04)	-0.0721 (0.04)	-0.0385 (0.04)			
Perceived Opportunities	-0.320*** (0.04)	-0.160*** (0.05)	-0.220*** (0.05)				0.145*** (0.02)	0.173*** (0.03)	0.113*** (0.03)			
Individualism				0.00315 (0.02)	-0.124*** (0.02)	-0.175*** (0.02)				-0.0847*** (0.02)	-0.163*** (0.02)	-0.165*** (0.02)
Uncertainty avoidance				0.0536* (0.02)	-0.0199 (0.02)	0.00702 (0.03)				-0.0528** (0.02)	-0.0599** (0.02)	-0.0561** (0.02)
LOG of GDP	-9.295*** (0.80)			-7.134*** (0.82)			-2.971*** (0.47)			-4.364*** (0.76)		
Ease of access to loans, 1-7 (best)		-5.106*** (0.77)			-5.956*** (0.57)			-1.185** (0.44)			-0.887 (0.52)	
LOG of unemployment			4.178*** (0.97)			5.605*** (0.89)			-1.839*** (0.49)			-0.109 (0.62)
Constant	121.9*** (9.83)	41.65*** (5.59)	12.07* (4.73)	92.12*** (7.64)	51.15*** (3.42)	21.43*** (2.98)	25.26*** (5.53)	-0.615 (3.25)	-3.301 (2.33)	60.86*** (7.61)	24.06*** (3.01)	21.45*** (2.03)
N	365	347	364	320	302	318	365	347	364	320	302	318
adj. R2	0.440	0.223	0.189	0.273	0.281	0.200	0.632	0.615	0.612	0.389	0.300	0.283
F	29.23	16.96	10.7	16.94	20.07	12.36	42.17	36.04	39.16	20.68	17.65	16.69

Note: all regressions include time fixed effects; (***), (**), (*) denote significance at p<0.01, p<0.05, and p<0.10 respectively; standard errors are presented in parenthesis

TABLE 10. Estimations of the impact of cognitive component on necessity-driven entrepreneurship and TEA (balanced panel)

Variable	Y as dependent variable						TEA as dependent variable					
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**	**(9)**	**(10)**	**(11)**	**(12)**
Perceived Capabilities	0.0300 (0.05)	-0.136 (0.07)	0.105 (0.06)				0.160*** (0.04)	0.147*** (0.04)	0.265*** (0.04)			
Fear of Failure Rate	0.00451 (0.09)	-0.248** (0.09)	-0.214* (0.11)				-0.0641 (0.03)	-0.129** (0.04)	-0.0918* (0.04)			
Perceived Opportunities	-0.271*** (0.06)	0.0293 (0.08)	-0.176** (0.07)				0.144*** (0.02)	0.194*** (0.03)	0.0982** (0.03)			
Individualism				0.0997* (0.04)	-0.140*** (0.03)	-0.203*** (0.03)				0.0263 (0.03)	-0.151*** (0.02)	-0.155*** (0.02)
Uncertainty avoidance				0.0541* (0.03)	-0.0771** (0.02)	-0.0706* (0.03)				-0.0293 (0.02)	-0.0780* (0.03)	-0.0796* (0.03)
LOG of GDP	-14.86*** (1.15)			-15.25*** (1.66)			-3.734*** (0.58)			-9.413*** (1.59)		
Ease of access to loans, 1-7 (best)		-10.37*** (1.13)			-7.613*** (0.70)			-2.015*** (0.51)			-1.043 (0.78)	
LOG of unemployment			8.801*** (1.54)			9.054*** (1.24)			-1.288* (0.56)			0.950 (1.25)
Constant	181.3*** (12.54)	74.34*** (7.15)	16.33* (6.90)	169.5*** (14.86)	62.10*** (4.00)	22.03*** (4.05)	36.60*** (7.11)	7.241 (3.82)	-0.529 (2.85)	104.9*** (15.29)	26.18*** (4.46)	20.88*** (3.09)
N	174	166	174	162	155	162	174	166	174	162	155	162
adj. R2	0.560	0.364	0.273	0.378	0.468	0.332	0.687	0.633	0.618	0.447	0.263	0.249
F	32.87	15.08	8.327	16.06	22.1	15.01	21.36	16.82	16.94	12.43	7.342	6.997

Note: all regressions include time fixed effects; (***), (**), (*) denote significance at p<0.01, p<0.05, and p<0.10 respectively; standard errors are presented in parenthesis

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